

## CONSERVATION GENETICS

**Avise, J. C. & J. L. Hamrick (editors): Conservation Genetics. Case Histories from Nature.** Chapman & Hall, New York – London. 1996, XVII + 512 pp. ISBN 0-412-05581-3, price £ 39.

The conservation biology and biodiversity conservation become more and more important under the conditions of changing environment and the existence of so many endangered species. The good understanding of the genetics of species is an essential part of each conservation program.

The book reviewed provides information both about the basic genetic principles of conservation and the specific approaches addressed and applied to different groups of living organisms. It is outgrowth of a presidential symposium of the Society for the Study of Evolution, held in Athens, Georgia (USA) in 1994. Nineteen authors contributed to the book completion.

The volume is organized in two major parts and consists of 15 chapters, covering large variety of groups of living organisms.

Part one focuses more generally on different taxonomic groups, reviewing the current achievements in the topics relevant to the conservation genetics: genetic diversity, population structure, molecular systematics and phylogeny. The chapters in part two are directed more to case histories on regional and/or ecosystem level.

The conservation genetics of many groups of living organisms, both animals and plants, is discussed in the fifteen chapters of the book. Several chapters deal with mammals, such as whales and dolphins, the families Felidae and Canidae, and even with the endangered primates. Other chapters focus on fishes, birds, some reptiles, like marine turtles, and even some invertebrates are mentioned in a more general regional context (Chapter 14). A particular attraction is the chapter dealing with desert fishes, *i.e.* fishes, living in the small water sources in the deserts.

Two chapters: 9 and 10 discuss the conservation genetics of the higher plants. In chapter 9, J. L. Hamrick and M. J. Godt present very profound comments on the nature of genetic diversity in the endemic plants and the implications for conservation. In relation to endemism, they make a general comparison between the genetic diversity of different groups of plant species, regarding their art of distribution and demonstrate the lower level of genetic variation in the endemics. The same authors made similar comparisons in other review papers, but in this case all the facts are discussed

from the point of view of the biological conservation. They also give several case examples with endemic plants, showing the greater possibility for a loss of genetic diversity in these plants, compared to the widely distributed ones. Hamrick and Godt demonstrate different patterns of genetic diversity distribution in some endemic plant species, thus pointing out the necessity of empirical data for the establishment of the conservation programs.

Similar topics are discussed also in chapter 10 by L. Rieseberg & S. Swensen with particular reference to the conservation genetics of the endangered island plants. Since many of the case studies, presented in these two chapters focus trees or other arboreal plant species (*Castanea dentata* Mill., the genera *Pinus*, *Rhus*, *Cerocarpus* etc.). They are of particular interest for forest geneticists and conservationists.

The last chapter is somewhat different and even controversial to the others, regarding the concepts discussed in. The author (M. Lynch) presents a very interesting and still neglected quantitative genetic perspective in the conservation studies and programs. He provides comparison between quantitative genetic and molecular approaches in conservation studies, based on fundamental population genetic principles and the empirical studies and points out that many molecular markers are not directly related to the fitness, and hence – to conservation practice.

This book is of interest for many conservation biologists. Forest geneticists and conservationists will be interested mainly in chapters 9 and 10, dealing with plants. But I believe the remaining part of the book will be also very useful, since the forests are themselves complex ecosystems, consisting of many other living organisms, except the trees. One of the editors' objective was to make the book readable even for people who only have a basic knowledge in genetics. This objective is completely achieved and, in my opinion, it is a pleasure to read the volume. It is believed that all interested in conservation biology and genetics will enjoy reading the book and will find many useful topics. It provides both review concerning the current achievements, and also orientation for further studies.

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